New York Avenue Corridor Study

Final Proposed Financing Plan

URS ● HNTB ● CS ● ERA ● JSA ● PBQD

April 27, 2005

CAMBRIDGE
SYSTEMATICS
Transportation leadership you can trust.

April 27, 2005

Mr. Rick Rybeck
Deputy Administrator
Transportation Policy and Planning Administration
District Department of Transportation
2000 14th Street, NW, 7th Floor
Washington, DC 20009

Re: New York Avenue Corridor Study
Contract No. PO-KA-2002-R-0004-LS
Task 8: Prepare Final Proposed Financing Plan (Revised Final Task Report)

Dear Mr. Rybeck:

On behalf of the consultant team, Cambridge Systematics is pleased to submit the attached Final Proposed Financing Plan for the New York Avenue Corridor Study. The document has been prepared in accordance with our Contract and our ongoing discussions, as the Study has proceeded.

We look forward to continuing to work with you and the Oversight Committee. In the meantime, if you have any questions or desire further information, please do not hesitate to contact me or other members of the consultant team.

Sincerely,

CAMBRIDGE SYSTEMATICS, INC.

Lewis G. Grimm, P.E.
Principal

LGG/jai/7213.008

4445 Willard Avenue, Suite 300
Chevy Chase, MD 20815
tel 301 347 0100 www.camsys.com fax 301 347 0101

New York Avenue Corridor Study

Final Proposed Financing Plan

URS ● HNTB ● CS ● ERA ● JSA ● PBQD

April 27, 2005

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION

The purpose of Task 8 is to estimate the capital costs of potential system improvements to the New York Avenue Corridor and to prepare a Proposed Financing Plan that describes conventional and alternate means for funding such improvements.

Completion of this task comprised the following activities:

- Dividing the entire Corridor into six functionally independent stand-alone segments, or "zones."
- Developing engineering cost estimates and a phasing timeline for the construction of the recommended improvements in each zone.
- Allocating the major categories of costs by zone proportionally across the *quarterly* time periods of any given year when they are likely to be incurred.
- Developing a schedule of aggregated *annual* construction costs for the various segments over the estimated life cycle of the project.
- Relating annual funding needs for the Corridor to available conventional funding sources, such as Federal-aid allocations to the District government.
- Identifying alternative phasing scenarios and non-conventional revenue sources to provide additional funding, where possible.

2. APPROACH

Given the span and functional diversity of the entire New York Avenue Corridor, the guiding approach used in this task was to refine the scope of analysis into more manageable, coherent project pieces that could be, for the most part, individually "priced," sequenced, and funded, as funding resources become available. The resulting segments, also referenced in this memorandum as "zones" and "sections," have unique construction timelines that are sometimes distinct from one another. However, over the entire project life cycle, activities on several independent segments are more likely to coincide or overlap, especially during peak activity periods associated with design, right-of-way acquisition, or construction activities.

A rather ambitious phasing schedule for these zones was devised as a starting point to illustrate a "best case" project completion scenario for the whole Corridor. While this scenario shows what could be accomplished given ideal circumstances (i.e., full funding availability), it is expected that at least moderate permutations to this timeframe – along with revenue from currently unanticipated sources – will be needed to finance even select portions of the overall project. This Task 8 Memorandum explores various alternative phasing approaches and relates them to available and potential funding sources. Because the entire project is conceived of as separate, largely independent subcomponents, adjusting the timeline of activities on various segments allows some budgetary flexibility in prioritizing resources while still providing a level of public benefits in at least a portion of the Corridor.

It is assumed that the benefits derived from these improvements will vary by segment, but will likely comprise some combination of increased safety, removal of bottlenecks, the creation of additional development opportunities, and/or an enhanced pedestrian experience. Although the Corridor will not see an evenly distributed or simultaneous improvement across its entire span, a steadfast process of funding and construction of smaller pieces will demonstrate tangible progress to stakeholders, including the primary Corridor users, pedestrians, neighborhood residents, and local businesses. Providing sustained, albeit limited, benefits over time is particularly important in maintaining momentum on a project of this scale and time horizon.

3. ORGANIZATION OF MEMORANDUM

The remainder of this Task 8 Memorandum consists of five major sections.

Section 4 provides estimated project costs for all six zones that comprise the New York Avenue Corridor across three basic cost categories: 1) right-of-way; 2) preliminary engineering; and 3) construction.

Section 5 introduces a "best case" project phasing scenario, whereby the timeline of comprehensive improvements on the entire Corridor is truncated to the potentially shortest duration using assumptions about the "start" and "end" dates associated with the implementation of each segment. An alternate phasing scenario is also presented, assuming an extended overall project life cycle and adjustments to the construction timeframes for select zones.

Section 6 presents potential revenue sources to fund the Corridor improvements, including "conventional" and "non-conventional" sources.

Section 7 presents the recommended funding strategies and discusses the relative viability of the previously outlined sources.

Section 8 presents an overall summary of findings.

4. ESTIMATED PROJECT COSTS

The estimated construction costs for all six zones comprising the entire New York Avenue Corridor employ engineering cost estimates used for similar transportation facilities, and include cost items such as preliminary engineering plans, utility upgrades, lighting, drainage, and excavation, among others. Estimates for design, construction, and contingency costs were developed using the Maryland State Highway Administration's 2002 Highway Construction Cost Estimating Manual, which served as the best and most readily available approximation for the District of Columbia. In cases where state estimates contained regional variations, the emphasis was placed on data from regions adjacent to the District – comprising Montgomery and Prince George's Counties. In order to reflect the highly preliminary nature of the estimates, the general approach was to select the most conservative values where ranges were provided. In the case of the right-of-way estimates, for example, the highest values contained in the range of CoStar[1] estimates for land values by zoning designation were taken into account.

Total costs in constant 2004 dollars were computed under three broad cost categories – preliminary engineering, construction, and right-of-way – for each of the project segments, as shown in Table 1. Using the above methodology, the total cost of all Corridor improvements is estimated at about $955 million[2]. Although financing costs and inflation are not reflected in the estimates, it should be noted that these two factors – in addition to the ultimate timeframe of completion – will undoubtedly increase the final price tag of the project. For the purposes of a simple comparison using an average annual inflation rate of 2.5 percent, the project might cost as much as about $1.2 billion in year-of-expenditure (YOE) dollars by the time it is completed under the "best case" scenario of 13 years. Using a 3.0 percent annual inflation rate would yield a total price tag of about $1.25 billion in YOE dollars, while the use of a 4.0 percent annual inflation rate would result in a total estimated project cost of about $1.37 billion in YOE dollars. It is likely that financing costs will add some indeterminable amount to this total. The tradeoff here would be between the cost of the potential financing charges versus the ability to construct the project earlier, and hence reduce inflationary effects, and the achievement of user benefits earlier than would be the case if the construction period were to be extended. Also, any deviations from the described "best case" assumptions relative to the timing for the construction of specific project elements will also have an appreciable impact. As efforts are undertaken to refine the value of the construction costs associated with each element of the overall total project, more detailed financing strategies will also need to be investigated.

---

[1] CoStar Group, Inc. is a major provider of information services on commercial property categories including: office, industrial/flex, and retail space for lease; and office, industrial/flex, retail, multifamily, hospitality, and commercial land for sale. It operates a large database of commercial real estate, including detailed property information, for lease listings, for sale listings, sale comparables, and tenant information.

[2] The total cost estimates are based on the bridge concept (Concept I-6), which proposes a shorter tunnel extension in comparison to the Longer Tunnel (Linton) option that was recommended by the National Capital Planning Commission (NCPC) due to the historical, urban design, and pedestrian safety implications posed by a bridge or at-grade alternative. Very preliminary conceptual studies put the estimated *additional* expense of the Longer Tunnel option at approximately $450 million (in 2004 dollars), and quite possibly more, given the additional depth needed to tunnel under the existing railroad tracks, and depending upon precisely where the longer tunnel would come back to surface and rejoin New York Avenue.

Table 1
Project Cost Estimates by Zone

Project	Activity	Cost	Duration (in Quarterly Periods)	Duration (in Number of Years)
Zone 1 (Urban Boulevard Enhancements)				
	Right-of-way	* N/A	N/A	N/A
	Preliminary engineering	$4,000,000	11	2.75
	Construction	$26,600,000	4	1.0
TOTAL		*$30,600,000*	*15*	3.75
Zone 2 (Montana Avenue Intersection – Beautification)				
	Right-of-way	* N/A	N/A	N/A
	Preliminary engineering	$1,000,000	9	2.25
	Construction	$5,400,000	3	0.75
TOTAL		*$6,400,000*	*12*	3.0
Zone 2 (Bladensburg Road Intersection)				
	Right-of-way	$43,560,000	4	1.0
	Preliminary engineering	$9,000,000	22	5.5
	Construction	$56,000,000	12	3.0
TOTAL **		*$108,560,000*	*35*	8.75
Zone 3 (Linear Park and Avenue Enhancements)				
	Right-of-way	$78,408,000	3	0.75
	Preliminary engineering	$11,000,000	23	5.75
	Construction	$93,600,000	8	2.0
TOTAL		*$183,008,000*	*34*	8.5
Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection)				
	Right-of-way	* N/A	N/A	N/A
	Preliminary engineering	$17,000,000	19	4.75
	Construction	$107,800,000	14	3.5
TOTAL ***		*$124,800,000*	*31*	7.75
Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration)				
	Right-of-way	$84,288,600	2	0.5
	Preliminary engineering	$50,000,000	36	9.0
	Construction	$326,400,000	24	6.0
TOTAL ****		*$460,688,600*	*53*	13.25
Zone 6 (Urban Avenue Enhancements)				
	Right-of-way	* N/A	N/A	N/A
	Preliminary engineering	$6,000,000	11	2.75
	Construction	$35,000,000	4	1.0
TOTAL		*$41,000,000*	*15*	3.75
GRAND TOTAL		***$955,056,600***		

* Zones 1 and 6 did not require any additional right-of-way acreage. In Zone 2, the Bladensburg Road Intersection portion required additional right-of-way, as well as the I-395 Tunnel Extension & Local Street Restoration portion of Zone 4 and 5.

** In Zone 2 (Bladensburg Road Intersection), the cumulative activity is only 35 quarters because preliminary engineering and construction activities overlap during three quarterly periods.

*** In Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection), the cumulative duration of activity is only 31 quarterly periods because preliminary engineering and construction activities overlap during two quarterly periods.

**** In Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration), the cumulative duration of activity is only 53 quarterly periods because preliminary engineering, construction, and right-of-way acquisition activities overlap during nine quarterly periods.

The total cost estimates are based on the bridge concept (Concept I-6), which proposes a shorter tunnel extension in comparison to the Longer Tunnel (Linton) option that was recommended by the National Capital Planning Commission (NCPC) due to the historical, urban design, and pedestrian safety implications posed by a bridge or at-grade alternative. Very preliminary conceptual studies put the estimated *additional* expense of the Longer Tunnel option at approximately $450 million (in 2004 dollars), and quite possibly more, given the additional depth needed to tunnel under the existing railroad tracks, and depending upon precisely where the longer tunnel would come back to surface and rejoin New York Avenue.

The Montana Avenue Intersection – Beautification treatments (part of the Zone 2 activities, which also include the Bladensburg Road Intersection) have the lowest construction price tag of all segments ($6.4 million), followed by the recommended urban enhancement activities for Zone 1 and Zone 6 ($30.6 million and $41 million, respectively). Activity on those three zones (with the exception of the Bladensburg Road Intersection improvements identified in Zone 2) is less complex and more flexible in terms of schedule in comparison to the remaining segments. In contrast, slightly less than half (48.2 percent) of the Corridor's total overall construction costs is related to the I-395 Tunnel Extension and the associated Local Street Restoration in Zones 4 and 5, comprising approximately $460.7 million. Because of its complexity, this combined section has a longer construction timeframe relative to all other segments, with uninterrupted activity in each quarter throughout the project's anticipated 13-year life cycle under the "best case" scenario.

It should be specifically noted that no estimated right-of-way costs have been identified relative to the Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection) element of the overall project. The rationale here is that the railroad overpass reconstruction would take place within the air-rights over the existing Northeast Corridor railroad tracks, which are already publicly owned by Amtrak, and that the reconstruction of the Florida Avenue/New York Avenue intersection into the form of a grade-separated interchange would also take place within the public right-of-way associated with this existing at-grade junction.

5. PROJECT PHASING SCENARIOS

"Best Case" (Shortest Project Life Cycle) Scenario

In tandem with the cost estimates, an aggressive construction schedule with anticipated "start" and "end" dates for each zone was devised to provide a visual representation of the entire project duration under ideal circumstances. Although, in real-world applications, construction costs will have uneven expenditure rates within a project life cycle (e.g., some costs may be frontloaded), the allocation of costs was greatly simplified for illustrative purposes and to serve as a starting point for highly probable schedule and cost adjustments in the future. As a result, the estimated costs by task and zone were allocated evenly across the number of quarterly periods associated with the completion of each task. For example, if the preliminary engineering phase for a particular segment was estimated to cost approximately $1.0 million and was phased over six quarterly periods, each quarterly period would be attributed one-sixth of that total estimated cost.

The sequencing schedule and applicable quarterly funding needs, as shown in Table 2, assume that work on the Corridor commences as early as Fiscal Year (FY) 2006, Quarter 2 (the spring of calendar year 2006) with preliminary engineering activities for Zone 2 (Montana Avenue Intersection – Beautification), Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection), and Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration). Given the estimated "start" and "end" dates of each segment, the aggregate schedule consisting of *all* project segments assumes that the Corridor can be fully constructed by FY 2019, Quarter 2. Any alterations from the construction timetable of key segments – the Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration) work – will extend this rather aggressive schedule beyond the 13 years as shown, because the schedule assumes that the work associated with these two key elements begin almost immediately and proceed continuously until the entire project is complete. The remaining segments, which largely comprise beautification and streetscape enhancement work, have greater flexibility in their construction timetables while still accommodating the "best case" timeframe.

Table 2
"Best Case" Scenario Phasing Schedule

Project Segment/Activity	Estimated Cost	Duration (in Number of Quarterly Periods)	FY 2006 Q2	FY 2006 Q3	FY 2006 Q4	FY 2007 Q1	FY 2007 Q2	FY 2007 Q3	FY 2007 Q4	FY 2008 Q1	FY 2008 Q2	FY 2008 Q3	FY 2008 Q4	FY 2009 Q1	FY 2009 Q2	FY 2009 Q3	FY 2009 Q4	FY 2010 Q1	FY 2010 Q2	FY 2010 Q3	FY 2010 Q4	FY 2011 Q1	FY 2011 Q2	FY 2011 Q3	FY 2011 Q4
Zone 1(Urban Boulevard Enhancements)																									
Right-of-way acquisition	* N/A	N/A																							
Preliminary engineering	4,000,000	11								363,636	363,636	363,636	363,636	363,636	363,636	363,636	363,636	363,636	363,636	363,636					
Construction	26,600,000	4																			6,650,000	6,650,000	6,650,000	6,650,000	
Zone 2 (Montana Avenue Intersection – Beautification)																									
Right-of-way acquisition	* N/A	N/A																							
Preliminary engineering	1,000,000	9	111,111	111,111	111,111	111,111	111,111	111,111	111,111	111,111	111,111														
Construction	5,400,000	3											1,800,000	1,800,000	1,800,000										
Zone 2 (Bladensburg Road Intersection)																									
Right-of-way acquisition	43,560,000	4																							10,890,000
Preliminary engineering	9,000,000	22				409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091	409,091
Construction	56,000,000	12																							
Zone 3 (Linear Park and Avenue Enhancements)																									
Right-of-way acquisition	78,408,000	3																							
Preliminary engineering	11,000,000	23			478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261	478,261
Construction	93,600,000	8																							
Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection)																									
Right-of-way acquisition	* N/A	N/A																							
Preliminary engineering	17,000,000	19	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737	894,737				
Construction	107,800,000	14																		7,700,000	7,700,000	7,700,000	7,700,000	7,700,000	7,700,000
Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration)																									
Right-of-way acquisition	84,288,600	2																							
Preliminary engineering	50,000,000	36	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889
Construction	326,400,000	24															13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	
Zone 6 (Urban Avenue Enhancements)																									
Right-of-way acquisition	* N/A	N/A																							
Preliminary engineering	6,000,000	11			545,455	545,455	545,455	545,455	545,455	545,455	545,455	545,455	545,455	545,455	545,455										
Construction	35,000,000	4														8,750,000	8,750,000	8,750,000	8,750,000						
TOTAL	955,056,600		2,394,737	2,394,737	3,418,452	3,827,543	3,827,543	3,827,543	3,827,543	4,191,180	4,191,180	4,080,068	5,880,068	5,880,068	5,880,068	12,284,614	25,884,614	25,884,614	25,884,614	24,834,614	31,120,978	30,226,241	30,226,241	30,226,241	20,866,241

* No right-of-way acquisition is needed in Zone 1 and Zone 6, as well as a portion of Zone 2 (Montana Avenue Intersection – Beautification) and Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection).

Table 2 (continued)
"Best Case" Scenario Phasing Schedule

Project Segment/Activity	FY 2012 Q1	FY 2012 Q2	FY 2012 Q3	FY 2012 Q4	FY 2013 Q1	FY 2013 Q2	FY 2013 Q3	FY 2013 Q4	FY 2014 Q1	FY 2014 Q2	FY 2014 Q3	FY 2014 Q4	FY 2015 Q1	FY 2015 Q2	FY 2015 Q3	FY 2015 Q4	FY 2016 Q1	FY 2016 Q2	FY 2016 Q3	FY 2016 Q4	FY 2017 Q1	FY 2017 Q2	FY 2017 Q3	FY 2017 Q4	FY 2018 Q1	FY 2018 Q2	FY 2018 Q3	FY 2018 Q4	FY 2019 Q1	FY 2019 Q2
Zone 1(Urban Boulevard Enhancements)																														
Right-of-way acquisition																														
Preliminary engineering																														
Construction																														
Zone 2 (Montana Avenue Intersection – Beautification)																														
Right-of-way acquisition																														
Preliminary engineering																														
Construction																														
Zone 2 (Bladensburg Road Intersection)																														
Right-of-way acquisition	10,890,000	10,890,000	10,890,000																											
Preliminary engineering	409,091	409,091																												
Construction				4,666,667	4,666,667	4,666,667	4,666,667	4,666,667	4,666,667	4,666,667	4,666,667	4,666,667	4,666,667	4,666,667	4,666,667																
Zone 3 (Linear Park and Avenue Enhancements)																														
Right-of-way acquisition			26,136,000	26,136,000	26,136,000																									
Preliminary engineering	478,261	478,261																												
Construction						11,700,000	11,700,000	11,700,000	11,700,000	11,700,000	11,700,000	11,700,000	11,700,000																	
Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection)																														
Right-of-way acquisition																														
Preliminary engineering																														
Construction	7,700,000	7,700,000	7,700,000	7,700,000	7,700,000	7,700,000	7,700,000	7,700,000																						
Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration)																														
Right-of-way acquisition														42,144,300	42,144,300															
Preliminary engineering	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889	1,388,889																	
Construction															13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000
Zone 6 (Urban Avenue Enhancements)																														
Right-of-way acquisition																														
Preliminary engineering																														
Construction																														
TOTAL	20,866,241	20,866,241	46,114,889	39,891,556	39,891,556	25,455,556	25,455,556	25,455,556	17,755,556	17,755,556	17,755,556	17,755,556	17,755,556	46,810,967	60,410,967	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000	13,600,000

* No right-of-way acquisition is needed in Zone 1 and Zone 6, as well as a portion of Zone 2 (Montana Avenue Intersection – Beautification) and Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection).

The annual budgetary implications of funding the project in accordance with the most optimistic, or "best case," phasing schedule are shown in Figure 1. In summary, the funds needed to maintain continuity of construction activity on the Corridor show steady, although fluctuating, rates of increase through FY 2012. The largest estimated annual cost increase (about 172 percent) between FY 2008 and FY 2009 is related to an assumed relatively simultaneous start-up of construction activity on Zone 6 (Urban Avenue Enhancements) and on Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration) and continued construction activity on Zone 2 (Montana Avenue Intersection – Beautification). These activities account for about $34.7 million of the total $49.9 million of FY 2009 costs, or 69.5 percent.

The second largest estimated annual cost increase (about 116 percent) is shown from FY 2009 to FY 2010, when construction on both Zone 1 (Urban Boulevard Enhancements) and Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection) is expected to begin and coincide with continued construction in Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration) and Zone 6 (Urban Avenue Enhancements). From FY 2012 to FY 2013, and more so from FY 2013 to FY 2014, a decrease in funding needs reflects a gradual completion of activities on some segments such as Zone 1 (Urban Boulevard Enhancements) and Zone 4 (Railroad Overpass Reconstruction; Florida Avenue Intersection). There is a rapid ramp-up in costs from FY 2014 to FY 2015, attributable to a large, concentrated right-of-way acquisition cost related to Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration) and spread across FY 2015, Quarters 2 and 3.

From FY 2016 until FY 2019, funding needs are estimated to remain relatively flat and will ultimately decline due to the gradual completion of the only remaining unfinished segment comprising Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration). Overall, the highest or "peak" needs for funding under this scenario occur in FY 2012, FY 2013, and FY 2015, and average about $127.5 million annually.

Alternative Phasing Scenarios

It should be emphasized, however, that the "best case" scenario is only one example of a potential phasing plan. The specific sequencing developed for this scenario results in the unique distribution of annual expenditures shown in Figure 1. In reality though, there is a multitude of sequencing combinations that would result in very different budgetary implications during the project's life cycle. For example, Figure 2 shows the effect of extending the overall project timeline from FY 2019 to FY 2025 while pushing back the schedules of urban enhancement and beautification activities in Zone 1, Zone 2, and Zone 6, in order to minimize overlap with the most time- and funding-intensive activities in Zone 4 and 5 (I-395 Tunnel Extension & Local Street Restoration). While the schedule of costs is different on an annual basis from the "best case" scenario, the "peak" funding need are also incurred in FY 2013, in addition to FY 2014 and FY 2016. However, the *total annual* and *average annual* funding needs for "peak" periods are lower for the alternate scenario. The three peak years reflect an approximate $98.61 million in average annual funding needs, which is about 29.3 percent lower than the "best case" scenario.

Figure 1
Estimated Annual Expenditures Under the "Best Case" Scenario

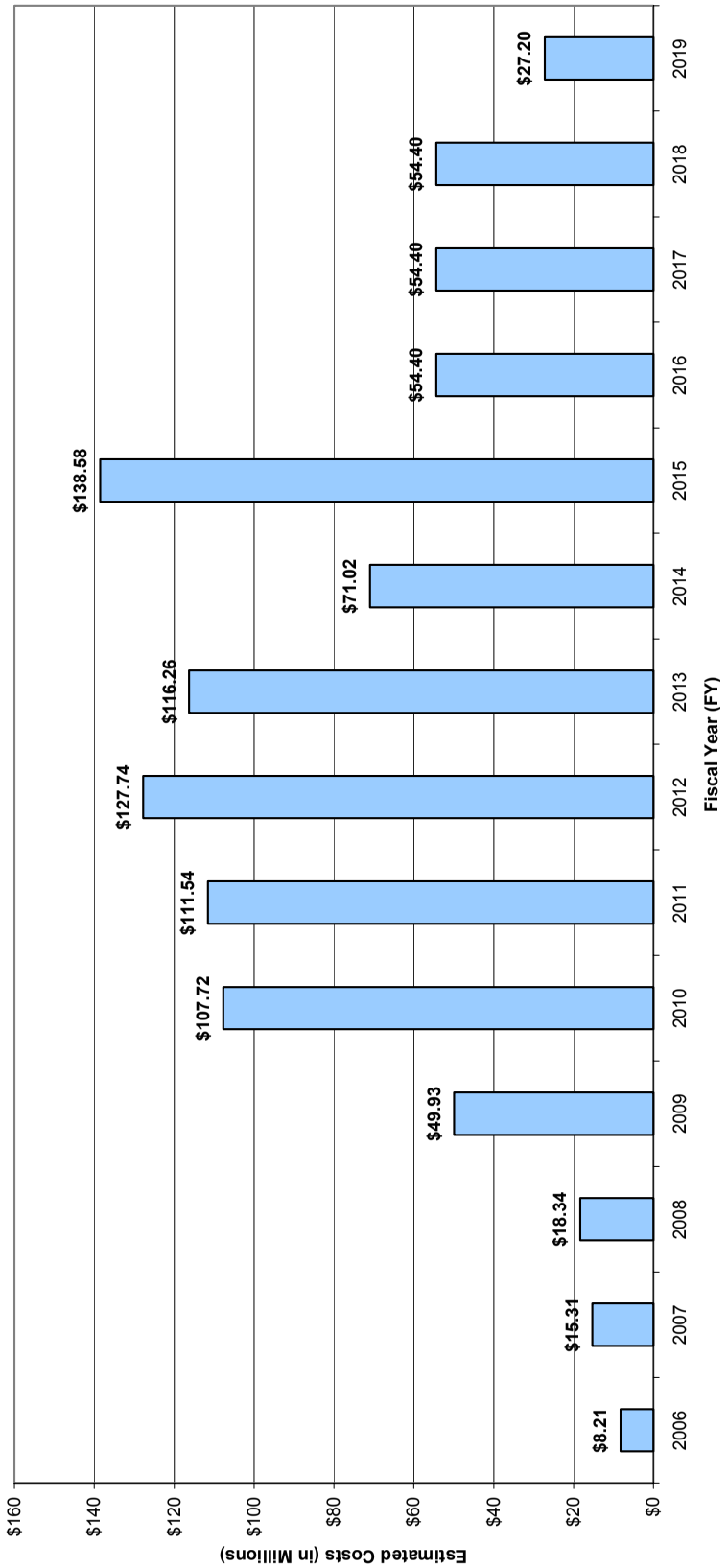
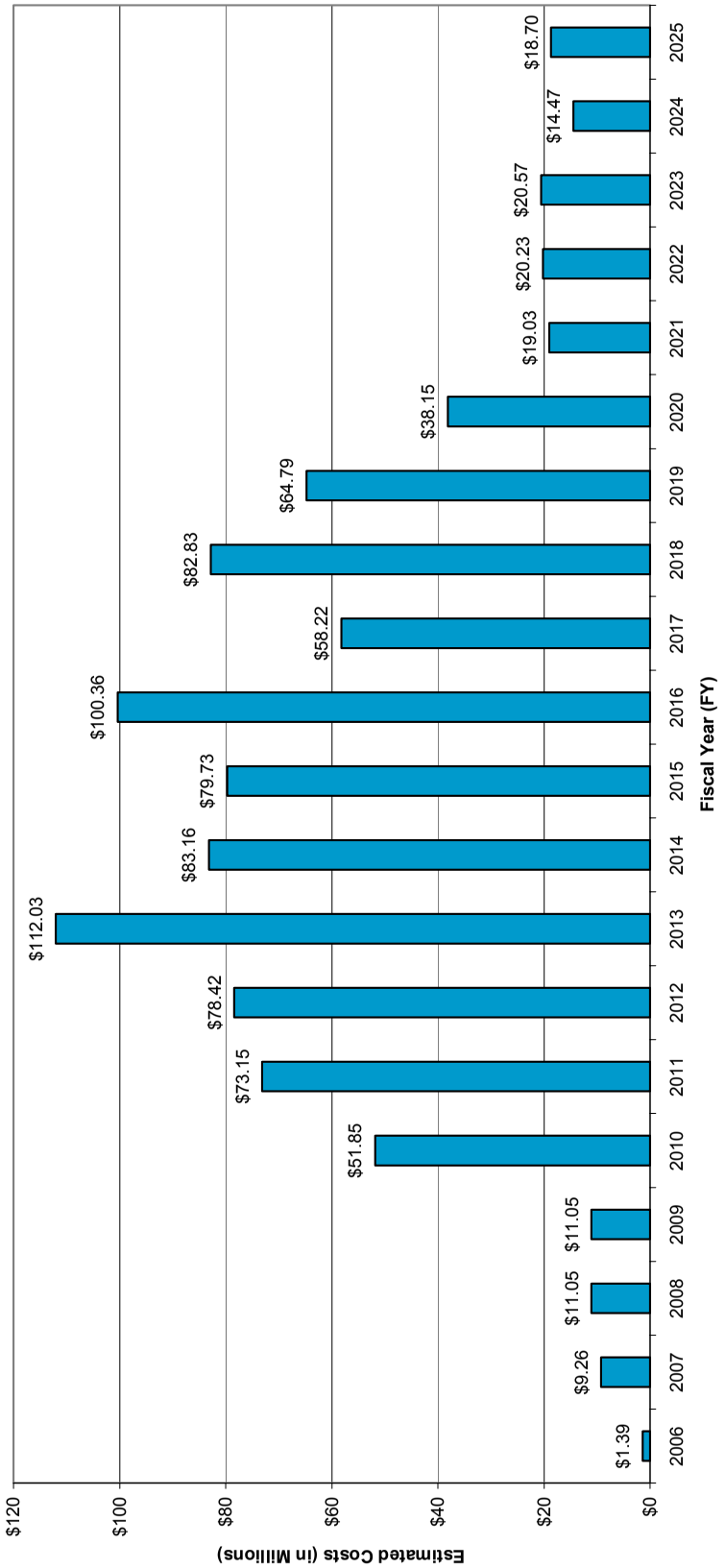


Figure 2
Estimated Annual Expenditures Under an Alternate Scenario



Taken together, the "best case" scenario and the described alternate funding scenario help frame the myriad of potential expenditure combinations at a very conceptual level. This framework is appropriate at this stage of the analysis when costs are not yet well defined and the schedule is only an approximation. Spreadsheet modeling and more sophisticated analytical tools may be better suited for simulating certain scenarios once "hard numbers" are established and budget and time constraints are better defined.

Aligning future resources with anticipated expenditures will likely entail a variety of policy judgments and iterative "what-if" calculations regarding the overall project schedule, the general prioritization between various pieces of the Corridor, and the overall project sequencing once funding becomes available. Based on future refinements of the "hard" and "soft" constraints for the phasing and sequencing of project components, the following represents a sample "envelope of possibilities" regarding alternate phasing scenarios:

- Selective prioritization of only the most significant, complex, and time-sensitive segments for earliest construction phasing, as funding becomes available.

- Deferring less complicated, "beautification" treatments until priority segments are constructed and additional funding comes to fruition.

- Extending the timeframe for the entire Corridor completion from an assumed "best case" scenario to a longer, yet still "acceptable" time period.

- Positioning major, expensive construction activities at the cusp of opportunity points for increases in Federal-aid highway apportionments.

The above discussion only presents a few policy options to give a rough idea of what some tradeoffs may entail. They are not an exhaustive list of possibilities or recommendations for action. Given the construction timeframe for the Corridor and internal and external variables that may come into play, it is too premature to assume what actions will be ultimately taken.

6. POTENTIAL REVENUE SOURCES

Funding a large, costly capital project such as the New York Avenue Corridor will likely require a combination of funding sources, which fall into two broad categories: historically-available "conventional" sources; and non-conventional, or "innovative," sources. Conventional sources comprise Federal funding (Federal-Aid Highway Program outlays), locally appropriated funds, bonding mechanisms (e.g., General Obligation bonds), and other smaller local revenue sources (e.g., utility fees) that are also used to fund transportation improvements. Conventional sources consist of public funds and are obtained with some degree of regularity and predictability. Non-conventional sources employed or seriously contemplated in other states largely imply a mix of public-private financing and represent a more volatile stream of revenue. Some examples of non-conventional sources include tolling mechanisms and regional revenue sharing arrangements. The viability and appropriateness of each of these mechanisms will be discussed in turn.

Conventional Sources

Federal Funds/Local Appropriations

As inputs to the 25-year regional Constrained Long-Range Transportation Plan (CLRP), the District forecasts revenues and expenditures as a sum of Federal-aid and local sources. Because local gasoline taxes and other local transportation fees comprise only a small portion of its funds for transportation programs, the District relies on general revenue sources or bond proceeds to provide funding for local transportation improvements.

The most recent 2003 CLRP update shows that current and projected Federal revenue and local appropriations for the District's highway program are already fully accounted for by other project needs, including deferred maintenance on bridges, which has recently warranted an exceedingly pressing response. There is currently no funding programmed for any New York Avenue Corridor improvements within the CLRP.[3] Additionally, an acute short-term cash-flow imbalance within the CLRP is projected over the next six years, resulting in about $1.8 billion of unfunded needs for deferred maintenance and other bridge and roadway needs. The District identified these unfunded needs as part of a recent National Capital Region Transportation Planning Board (TPB) effort to compile a regional summary of near-term funding shortfalls. New York Avenue Corridor improvements are on the District's list of several competing unfunded projects, showing an estimated "placeholder" price tag of $450 million for the six-year FY 2004 to FY 2010 period.

Baseline Scenario

The limited number of new highway and transit facilities included in the latest CLRP update reflects the prioritization of available funding toward system preservation, maintenance, operations, and maximizing the performance of existing facilities. Therefore, reliance on the

[3] It should be noted that the District of Columbia FY 2004-2009 Transportation Improvement Program (TIP) contains $40 million in construction funding in FY 2004 for the reconstruction of the 9th Street Bridge over New York Avenue and the railroad.

normal processes of allocation of Federal-aid resources may not yield large new revenues to sustain major capital projects, unless a moderate to dramatic expansion of Federal-aid for highways comes to fruition in future years. While Federal funding will be crucial to undertake any, albeit limited, improvements on this Corridor, the need to tap other sources will be paramount. Even if funding availability comes to pass, and only the most crucial segments of the Corridor (i.e., the I-395 tunnel extension) were deemed worthwhile and desirable to undertake, this project still remains but one of many unfunded transportation priorities within the District. It is quite possible that the future political climate and policy goals may warrant propelling other priorities, particularly dire deferred preservation needs for highways as well as transit, to the forefront of the transportation funding agenda.

Increased Funding Scenario

If, by circumstance, the "baseline" scenario described above proves too conservative, and greater than anticipated revenue becomes available, the outlook for obtaining funding through this source may improve. The degree and breadth of the potential impact will be largely influenced by the opportunity cost of foregoing *other* urgent transportation needs at that given time, assuming such tradeoffs will be needed to advance the Corridor construction timeline. Key opportunities for increased transportation funding revolve around the outcomes of the six-year Federal reauthorization cycles, one of which is underway now but whose outcome is still undetermined. The likely construction timetable of the Corridor will be influenced by Federal funding related to at least two, if not more, future reauthorization cycles (in 2010 and 2016). Limited evidence from the more recent reauthorizations offers at least a nugget of optimism.

The most recent Transportation Equity Act for the 21st Century (TEA-21) authorization (1998-2003) increased the District's Federal-aid highway apportionment by roughly 20 percent over the preceding six-year period covered by the Intermodal Surface Transportation Efficiency Act (ISTEA).[4] While this past increase should be interpreted cautiously and does not guarantee a similar pattern of growth in the future, the potential for future increases nevertheless exists. Several factors, including favorable economic conditions and a political climate that is sympathetic toward bridging long-neglected capital needs, will help influence the future funding outlook.

In addition to traditional Federal-aid funding, the achievement of special Federal earmarks can considerably boost a state's chances to fund expensive designated projects, such as the Wilson Woodrow Bridge. Unlike traditional Federal-aid highway apportionments that are continuous and largely predictable, earmarks represent a much more volatile and opportunistic revenue source. An attractive feature of earmarks is their potential to provide higher amounts of funding relative to other means. Moreover, earmarked funding is specifically tied to a project and cannot be redirected to other projects, which distinguishes it as a particularly reliable source.

[4] It should be noted that the increase in budget authority should be interpreted cautiously, because the District's obligation ceiling, which sets a ceiling for incurring of expenditures, may not rise at the same rate. There have been some differences in the past between apportionments and obligations, which could affect the District. The rules for how this will be handled in the next reauthorization have not yet been established.

The New York Avenue Corridor does serve an important regional travel function; however, the District's lack of representation in Congress, the physical location of the Corridor entirely within the District boundaries, and the single-mode nature of the project diminish its ability to obtain a broader, regional constituency of support. Although it is unlikely that the New York Avenue Corridor project can obtain sufficiently positive leverage in a competitive earmarking process, the recent example with respect to the South Capitol Street corridor presents at least some tangible, although unknown, potential. The South Capitol Street corridor earmark was created by the Maryland Congressional delegation due to the impact of the corridor on travel to and from downtown Washington by its constituent base. A similar argument could clearly be made for the New York Avenue Corridor, most of whose users are residents of Maryland.

General Obligation Bonds

General obligation bonds are the most common source of local funding for the District's transportation needs and provide most of the revenue required to make the local match for Federal-aid funding. The bonds can be repaid through a variety of tax sources, unlike revenue bonds that are only payable from specified revenues. Bond-generated revenue is expected to be the most common and reliable source to approach the breadth of revenue commitments needed to fund the New York Avenue Corridor. It is likely that a combination of bond revenues to be repaid in future years, along with crucial Federal funding, present the most viable means for partial, if not full, financing of this project.

Governmental Revenue Bonds

While general obligation bonds need to be secured by the good faith and credit of the issuing government, the use of government revenue bonds relieves the sponsoring localities and states of similar commitments. States and municipalities have historically made extensive use of governmental revenue bond issues to finance redevelopment of depressed areas without increasing the general public debt. The revenue bonds can fund a variety of facilities, including streetscape improvements, plazas, public parks, recreation centers, public schools, and other general public uses. These bonds are secured, in whole or in part, by the pledge of dedicated taxes and fees, such as payments-in-lieu of taxes, tax increments, and special taxes. One of the principal techniques to achieve economic development goals is to establish a public instrumentality or authority that is legally empowered to issue special obligation revenue bonds, which are repayable solely from a special fund dedicated to that purpose. Because the empowered authority's bonds and other debts are deemed separate from those of the government, the general public treasury holds no liability for the repayment of the obligations.

The District employed a similar mechanism during the construction of the new Washington Convention Center, which fell under the jurisdiction of the newly created Washington Convention Center Authority (WCCA). Per the WCCA Act, this independent, corporate body was authorized to issue approximately $524.5 million in senior lien dedicated tax revenue bonds to finance the construction of the new convention center. These taxes – comprising a separate sales and use tax of 4.45 percent (of the District's 14.5 percent) on hotel room charges and a sales and use tax of 1.0 percent (of the District's 10.0 percent) on restaurant meals, alcohol beverages consumed on the premises, and rental vehicle charges – fund the

maintenance and operation of the Center. These dedicated funds are, however, not available for general District purposes such as transportation improvements.

Open transportation facilities in general are not well-suited for the application of this funding mechanism, in comparison with self-contained recreational or hospitality facilities such as the Convention Center. Creating a comparable analogy in the case of the New York Avenue Corridor improvements would be considerably more problematic due to the administrative infeasibility of imposing and collecting dedicated taxes from users of this open-access facility.

Tax Increment Financing (TIF)

As a variation of the revenue bond theme, tax increment financing (TIF) focuses directly on the marginal benefits of public investments. TIF captures the additional tax revenue that is estimated to be derived from the increase in property values resulting from a transportation improvement. It involves the issuance and sale of tax-exempt governmental revenue bonds to finance public infrastructure redevelopment within one or more predetermined geographic areas. TIF projects must be consistent with statutory criteria (e.g., a redevelopment plan) and are typically buttressed by feasibility studies, cost/benefit analyses, and development agreements with sponsors of private projects within the areas receiving the benefit. The government or its instrumentality usually retains the power to issue bonds and to use limited tax collection authority. As a mechanism to secure the repayment of these bonds, the government consents to segregate into a separate account a portion of the incremental growth in real property tax collections occurring within the area from a specific date. Sales tax increments or other increments also may be applied to shorten the bond repayment period or to provide a credit enhancement.

While TIF financing may provide some minimal revenues for the New York Avenue Corridor improvements, it is substantially limited in achieving the kind of revenue stream needed to fund the most structurally complex and costly sections of the overall project; namely, the tunnel portion. Another impediment remains in that viable businesses seeking such financing must be readily identifiable and, preferably, physically concentrated in rather narrow areas. This is contrary to the existing conditions on large sections of the New York Avenue Corridor, which are characterized by vacant and underutilized land uses. However, this mechanism, in conjunction with other more robust sources, has some limited potential to fund the less complicated beautification and "urban boulevard enhancement" activities that will improve the streetscape for nearby businesses.

Value Capture

Related to the concept of TIF, opportunities for other types of value capture are limited, primarily due to the fact that most of the value increases that will occur in the most urban portion of the Corridor (i.e., the Mount Vernon Triangle area) have already been "captured." The Convention Center District and the area known as "NoMa" (or North of Massachusetts Avenue) has already "priced in" the increases in land values that would have occurred regardless of any transportation improvements in that section of the Corridor. Additionally, the $250 to $450 per square foot right-of-way costs assumed in the cost estimate of this project already assume that the land would be utilized to its best potential.

A noteworthy mention, however, is the potential creation of air rights development in Zone 5 if I-395 is extended underground and the area above it from K Street to New York Avenue becomes available for use by the private sector. It is estimated that this developable remnant will comprise an area of approximately 5.7 acres. Depending on the zoning potential, that remnant alone could potentially generate $200 to $450 per square foot of "new" value to the District. In total, this could represent a value of between approximately $49.7 million (at $200 per square foot) and approximately $111.7 million (at $450 per square foot). The resulting sale of these new "public" air rights areas to the private sector could thus generate a significant increment of funding that could be dedicated to the overall project. Moreover, the value of future tax revenues generated by any developments constructed by the private sector on these new land parcels could also be dedicated for use by the New York Avenue project.

Non-conventional Sources

Tolling/Value Pricing

Several states, including Maryland and Virginia, have shown considerable interest in recent years in some variation of a tolling mechanism to help ease the impact of congestion on their interstate highways. The benefits of tolling include the ability to employ congestion pricing during peak periods, the provision of a new and viable travel choice for commuters that offers greater travel-time reliability, the ability to fund the operations by direct user fees using electronic means, improved traffic conditions and safety, and community and environmental benefits resulting from lowered vehicle emissions on less-congested highway lanes.

In Maryland, several project-planning studies are currently underway that include an evaluation of electronic Express Toll Lanes for a number of the State's busiest highway segments, including: portions of I-95 north of Baltimore, I-95/I-495 (Capital Beltway), I-270, and I-695 (Baltimore Beltway). In Virginia, a different variant of the tolling approach, called HOT (High Occupancy/Toll) lanes, is gaining currency for portions of the Capital Beltway and I-95. On HOT lanes, a solo driver can pay a fee to access High-Occupancy Vehicle (HOV) lanes normally reserved for transit buses and carpools.

While both approaches present a more efficient means to price the use of the roadway system and to provide needed lane capacity, they are not well-suited for application in the New York Avenue Corridor. Tolling is only feasible in limited access facilities. The New York Avenue Corridor does not fit that characterization, particularly because it has several functional uses and transition points – ranging from an urban parkway on one hand, and a neighborhood avenue on the other. Moreover, it is not wide enough in most segments to support room for side-by-side tolled and non-tolled portions. Assuming the consideration of HOT lanes, it does not support physically separated lanes and enforcement of access restrictions on those lanes. Moreover, such an option would be a political "hard sell" because it is an existing free facility.

Nonetheless, significant improvements to roadway safety and the elimination of bottlenecks are benefits that could justify the use of tolls as equitable user fees that could be applied to the entire roadway – without a requirement for separated tolled and non-tolled lanes. Also, hypothetically, if other nearby entry points to the District are included in the tolling

regime, the tolling of the Corridor could be a more viable option because negative spillover effects to alternate routes will effectively disappear.

Although some Federal funds have historically been set aside toward exploring the potential of different value pricing approaches for reducing peak-period traffic congestion (i.e., under the Value Pricing Pilot Program that yielded about $11 million annually from FY 2000 to FY 2003[5]), the benefits of such funding are limited because tolling mechanisms, although permissible under this program, would need to be used to repay the Federal government for its share of original project costs. Additionally, the maximum amount of funds available is relatively small and would likely be applied to funding studies, as opposed to construction activities, and would be diluted by competition from other states for these funds.

While much of the recent work in the Washington region has focused on potential tolling and value pricing activities along portions of the limited-access freeway system in the area, there has also been significant interest expressed in a widespread application of value pricing principles. The TPB, in cooperation with the Federal Highway Administration, the District of Columbia Department of Transportation, the Maryland Department of Transportation, and the Virginia Department of Transportation, sponsored a conference on June 4, 2003, on the topic of "Value Pricing for Transportation in the Washington Region: Providing New Transportation Choices Through Innovative Pricing Strategies." Attended by more than 185 persons, the conference represented the region's first major public discussion regarding the need and opportunities for innovative transportation pricing strategies. Bolstered by the success of this event, the TPB established a task force in July 2003 to examine how the concept of value pricing could benefit the transportation system in the Washington region. The defined goals of the Task Force are as follows:[6]

1. Explore the role of pricing and market-based solutions in a regional context.

2. Evaluate the regional implications of proposed value pricing projects, including scenarios in the Regional Mobility and Accessibility Study.

3. Assist in education and outreach to create greater awareness of the potential benefits of pricing, drawing upon experience in other locations nationally and internationally.

4. Develop recommendations for the TPB on task force findings regarding parameters, principles, guidelines, or lessons learned on the regional implications of value pricing.

The task force met a total of six times between September 2003 and June 2004. Among the products of the task force was the definition of a "regional scenario" of variably priced highway travel lanes for 2030 for consideration as part of the TPB Regional Mobility and

[5] http://www.fhwa.dot.gov/policy/otps/valuepricing.htm.

[6] Status Report of the Task Force on Value Pricing for Transportation in the Washington Region; TPB Meeting; June 16, 2004.

Accessibility Study. As shown on Figure 3 below, the New York Avenue Corridor was identified as an element of this regional variable pricing system.

Figure 3
Proposed Variably Priced Lanes Scenario, 2030

Depending upon the ultimate disposition of this regional variably priced lane scenario, the opportunity may be provided to incorporate this funding source into the total revenue stream for the New York Avenue Corridor project.

Regional Revenue Share

As localities have found it increasingly difficult to generate all required funding resources on their own, revenue sharing agreements have emerged as an important tool to establish successful regional economic development projects. The funding for the regional Metrorail system operated by Washington Metropolitan Area Transit Authority (WMATA) is an example of such an agreement, which arose because of an overriding need to provide regional assistance and funding for a successful transit network that spans the Virginia and Maryland state lines, as well as the District.

While the New York Avenue Corridor serves regional purposes as a gateway into the District, it will be more difficult to suggest a regional framework for a facility that is contained entirely in the District boundaries. A major hurdle to a sharing agreement of that sort will be the establishment of a statutory authority to enable revenue sharing powers. Taming the political will of adjacent jurisdictions for cooperation may be an arduous task if they do not see the benefits of such an arrangement. Yet, although most of the external users of the Corridor are Maryland residents, license plate surveys could provide fair and objective data for determining an appropriate apportionment of the financial responsibilities among Maryland, the District, and Virginia.

If, however, a regional sharing arrangement could be established, it would likely involve many corridors, of which the New York Avenue Corridor could then serve as one component. A very preliminary and informal step in that direction involved a discussion among members of the TPB to include the Corridor as part of the regional roadway pricing network in the Washington Metropolitan Region. Draft language that would formalize such an agreement has not yet been developed or published on the Washington Region Council of Governments' web site. Although the creation of a regional framework can be best described as in the very nascent stages today, it is conceivable that a more directed stance can develop over the medium to long term that would provide stronger viability toward revenue sharing.

Creation of a Benefit Assessment District

While not a significant source of new revenue, the creation of a Benefit Assessment District in the Corridor may at least spur some positive, but yet relatively low-level streetscape/beautification improvements. Benefit assessments are fees levied on properties to be used to pay part or all of the cost of capital improvements that would enhance the value of and benefit the property. This mechanism was used by landowners near the intersection of New York and Florida Avenues to fund a substantial portion of the new Metrorail Station there. If landowners believe that new roadway infrastructure would substantially enhance their property values, it could be used again.

Homeland Security Grants

The potential for the New York Avenue Corridor project to tap into homeland security funding as a potential revenue source is highly unlikely given the nature of the three existing grant programs for which the District, other states, and U.S. territories have dedicated annual allocations.

By way of a summary, the U.S. Department of Homeland Security – Office of Domestic Preparedness (DHS-ODP) determines each fiscal year allocation on the basis of geography and population share among states and U.S. territories. The most recent FY 2004 funding allocation for the District was $19.25 million, comprised of: 1) the State Homeland Security Program (SHSP) allocation of $14.6 million; 2) the Law Enforcement Terrorism Protection Program (LETPP) allocation of $4.3 million; and 3) the Citizen Corps Program (CCP) allocation of $303,000. The SHSP provides funding for homeland security and emergency operations planning; purchase of specialized equipment to enhance capability for terrorism prevention, response, and mitigation; and funding for training programs and exercises on cyber security. The LETPP funds are tailored to law enforcement communities for planning, organization, training, exercises, and equipment. Lastly, the CCP is used to provide support to the Citizen Corps Councils with planning, outreach, and program and activity management.

The planning and construction activities for the Corridor are not currently aligned with the intent of any of these three programs. Moreover, the District has already completed the types of emergency planning activities that could potentially be covered under the SHSP.[7] At the outset, a state, locality, or U.S. territory would need to demonstrate that a project supports the goals and objectives identified in its Homeland Security Strategy document that must be reviewed and approved by DHS-ODP in advance and that serves as the basis for vying for security grants.

Public-Private Partnerships

The notion of enlisting private support for the Corridor could potentially yield some, although minimal, revenue relative to the large price tag of the Corridor construction costs. Specifically, the act of enlisting private insurance firms to provide funding in exchange for the financial benefits they could potentially accrue from a reduction of claims has had some merit recently. For example, several engineering firms in various locales around the United States have been hired by local governments with funding provided by insurance companies to perform planning and preliminary engineering studies, particularly to provide mitigation strategies for unsafe intersections such as the junction of New York and Florida Avenues. The aim of this work, however, is to make incremental changes such as realignments and signalization improvements, which are of much lower magnitude than a corridor improvement. Nonetheless, they could present some opportunities to fund some preliminary engineering work on the

[7] Several emergency planning documents have been published on the Metropolitan Washington Council of Governments web site (http://www.mwcog.org/security/security/), including "The District Response Plan" (April 4, 2002), "Regional Emergency Coordination Plan (RECP)," and "Planning Guidance for the Health System Response to a Bioevent in the National Capital Region."

Corridor that has not already been performed as part of the District's ongoing examination of high-accident locations.

7. RECOMMENDED FUNDING STRATEGIES

It is unknown at this time whether all or just the most highly prioritized sections of the New York Avenue Corridor will get funded and constructed over a "reasonable" time period, which also lacks clear and definite parameters. It is assumed that the conceptualization of the Corridor as the sum of smaller, more manageable project segments will simplify and rationalize its construction, and to make it more likely that at least some improvements will be implemented in a phased approach.

The summary of potential funding sources indicates that no single source is likely to generate enough revenue to cover an estimated $955 million in improvement costs for the New York Avenue Corridor. The one obvious, although probably not plausible, exception is if the District undertakes this project entirely at its expense through the issuance of general obligation bonds. At the most basic level, this course of action would assume that the project has an exceedingly strong political will to succeed, that the need to make the recommended improvements is sufficiently warranted and pressing, and that the opportunity cost of not committing funding in a timely manner is higher for the New York Avenue Corridor than a myriad of other unfunded highway and transit needs that are currently outstanding or looming over the 20-year horizon. Assuming those circumstances are met, the act of borrowing such a large sum of funds could still have other opportunity costs – in terms of potential negative implications for the District's bond ratings, debt service requirements, and future borrowing authority, which would be especially felt during unfavorable economic cycles. It should be also noted that the ability to commit large sums of funding toward this project will be tempered by the District's statutory limit on its bonding authority at any specific point in the project's life cycle, and the size of the gap between outstanding bonding levels and the statutory maximum.

As of April 2004, Moody's Investor Service has upgraded the District's general obligation bond rating by two notches, from Baa1 to A2, and changed the rating outlook to stable from positive. While this is a positive development, it is the first time since at least 1990 that Moody's has given the District an "A" rating. Given the volatility and uncertainty of economic circumstances over time, it is more feasible that the bonding mechanism be used in conjunction with other sources, or limited only for partial funding of some (but not all) Corridor improvements.

The most likely sources to supplement bonded revenue are the traditional Federal-aid highway appropriations, which have historically been leveraged to finance large capital projects. However, more and more Federal funding have been directed away from enhancement types of capital improvements and toward preservation activities, which poses an obstacle for relying too heavily on this source. Nonetheless, possibilities of increased funding under future Federal highway reauthorization cycles will undoubtedly improve the prospects of obtaining more revenue that could be dedicated to this project if it competes successfully for prioritization among many other unfunded needs. The favorable aspect of using this source is its predictability and potentially high revenue yield. Moreover, the District could choose to implement important projects through the use of Grant Anticipation Revenue Vehicle (GARVEE) bonds, which would essentially allow an agency to finance a project based on the anticipated flow of future grants from regular Federal sources.

It is possible that limited uses of TIF or TIF-like mechanisms such as the creation of a Benefit Assessment District in the Corridor, or some types of private-public mechanisms could provide some limited revenues toward the Corridor improvements, although the revenue yields are less reliable or predicable. These are issues for further consideration during detailed environmental/engineering studies required by the National Environmental Policy Act (NEPA).

Of lesser to marginal feasibility are some of the innovative approaches that do not bode well given the character and functionality of the Corridor as an open-access road physically located entirely in the District's boundaries. At first glance, these include tolling and regional revenue-share mechanisms. However, given adequate political will and persuasion, a mechanism such as a new regional tax could conceivably provide some revenue in lieu of that required from other, more conventional sources.

8. CONCLUSION

In summary, traditional Federal funding and local bonding mechanisms provide the most reliable and accessible sources of revenue to fund the New York Avenue Corridor improvements. An "increased funding" scenario of additional Federal-aid highway apportionments to the District over time will improve the prospects of this source. By way of a hypothetical example, if Federal-aid and the local match increased by $100 million per year and the New York Avenue Corridor were deemed of such high priority that it could capture a very optimistic 50 percent of that gain, then approximately $50 million annually would be available to fund the most complex portions of the Corridor (estimated to cost about $460.7 million) over 10 years, with about $39.3 million left. The remaining $455 million in needs would require the use of other revenue sources. General obligation bonds could provide some of that shortfall. Such public investments can be potentially justified on fiscal grounds, illustrated by a sample analysis that was conducted for the Corridor.

The analysis addressed benefits accruing from the Corridor improvements from a purely fiscal perspective, using a 20-year net present value (NPV) of an anticipated tax revenue stream to determine the maximum total funding needs that can be reasonably offset. The anticipated revenue components comprised changes in real estate, retail sales, personal income, and franchise taxes. Three funding scenarios were examined: 1) a "baseline" condition; 2) an "improved" scenario; and 3) a "no-action" scenario. The "baseline" scenario assumed that current levels of service and conditions are maintained in the future without any additional funding. The intermediate, or "improved" scenario, assumed a significantly better level of service and beautification treatments in the Corridor. As a result, a 15 percent increase was assumed in the Corridor's market capture rate for various uses. In the "no-action" scenario, no public investments are made in the Corridor, resulting in deterioration over time. A 15 percent decrease in the market share of the Corridor was assumed.

The net present value of tax revenues over a 20-year timeframe was calculated for each scenario. The "baseline" scenario assumed a revenue gain of $461.3 million. The "improved" scenario assumed about $71.7 million of additional net revenue in excess of the "baseline" assumption, resulting in a total $533 million. In contrast, the "no-action" scenario assumed only about $389 million in revenue. Therefore, at best, a revenue stream of about $71.7 million could be generated through these means to offset future construction costs.

Combined with the other sources mentioned in the hypothetical example, the total revenues garnered by Federal and local sources would be $500 million + $71 million = $571 million. Although this total does not approach the much higher price tag of about $955 million, it undoubtedly makes strides in that direction. A series of other combinations could be undertaken, providing a variety of outcomes. The above funds could also be supplemented by other, smaller revenues such as utility fees (which have some limited use for local transportation improvements) or TIF mechanisms, where feasible. While no assumptions have been made regarding potential land uses and densities in the Corridor at this time, ongoing transportation improvements may contribute to enhanced land values in the Corridor in the future. The net revenues could potentially offset some portion of needed funding for future improvements.